

ABSTRACT OF THE DISCLOSURE

Apparatus and methods for automating a sequence of basic chemistry operations through a recipe. Software running on a workstation communicating with a controller allows an operator to operate the process controller, view the process, log the process, and maintain the recipe. The controller communicates with the process hardware and receives commands from the workstation, stores the commands, interprets the commands to perform the process, and provides monitoring information to the workstation. The workstation software uses a recipe to control the process. The recipe is expressed in terms of the process. The controller runs software routines for process control and for hardware control.